

What is claimed is:

1. A control valve system comprising:

a housing having an inlet port, a first output port, a second output port, and a valve chamber;

a primary spool having first and second longitudinal ends with respective working surface areas being substantially equal, wherein said primary spool is slidable in said valve chamber to a first position where fluid communication is established between said inlet port and said first output port, a second position where fluid communication is established between said inlet port and said second output port, and an intermediate third position where fluid communication is generally prevented between said inlet port and both of said first and second output ports;

a secondary spool independently slidable in said valve chamber, said secondary spool having a first end for abutting against said second end of said primary spool and having a second end with a working surface area greater than either of said working surface areas of said primary spool;

a solenoid valve assembly coupled in fluid communication with said inlet port, wherein said solenoid valve assembly is positionable in a first position for providing fluid communication from said inlet port to said second end of said secondary spool to move said primary spool from said first position to said second position, and wherein said solenoid valve assembly is positionable in a

second position to isolate said inlet port from said second end of said secondary spool;

a biaser providing a biasing force to said primary spool in a direction toward said first position, said biasing force having a predetermined magnitude when said primary spool is in said third position; and

a first fluid passage through said primary spool providing fluid communication between said first output port and said second end of said primary spool for displacing said primary spool relative to said secondary spool in an energy saving mode when said solenoid valve is in said second position, thereby regulating a pressure at said first output relative to said predetermined magnitude of said biasing force.

2. The control valve system of claim 1 further comprising a second fluid passage having an open condition and a closed condition for selectably providing fluid communication between said inlet port and said first end of said primary spool, wherein said control valve system operates in a standard mode with said primary and secondary spools moving in unison when said second fluid passage is in said open condition, and where said control valve system operates in said energy saving mode when said second fluid passage is in said closed condition.

3. The control valve system of claim 2 further comprising an end cap enclosing said valve chamber proximate said first end of said primary spool,

wherein said end cap includes a third passage therein, and wherein said end cap is selectably attachable with a first orientation wherein said third passage couples said second passage with said valve chamber and with a second orientation wherein said second passage is blocked from said valve chamber.

4. The control valve system of claim 2 further comprising a movable obstruction for selectably blocking said second fluid passage to create said open and closed conditions.

5. The control valve system of claim 4 wherein said movable obstruction is comprised of a screw.

6. The control valve system of claim 1 wherein said valve chamber comprises a main chamber receiving said primary spool and having a first cross-sectional area corresponding to said working surface areas of said first and second ends of said primary spool, and wherein said valve chamber further comprises a secondary chamber receiving at least a portion of said secondary spool and having a second cross-sectional area corresponding to said working surface area of said working surface area of said second end of said secondary spool.

7. The control valve system of claim 6 further comprising a relief passage coupled to said secondary chamber for relieving pressure in said secondary chamber when said solenoid valve is in said second position.

8. The control valve of claim 1 wherein said second end of said primary spool and said first end of said secondary spool include complementary alignment features for intermeshing when said primary spool and said secondary spool are abutting.

9. A method of operating a control valve system wherein said valve system includes a housing having an inlet port, a first output port, a second output port, and a valve chamber, wherein said valve system includes a primary spool having first and second longitudinal ends with respective working surface areas being substantially equal and a secondary spool independently slidable in said valve chamber and having a first end for abutting against said second end of said primary spool and having a second end with a working surface area greater than either of said working surface areas of said primary spool, wherein said valve system includes a solenoid valve assembly coupled in fluid communication with said inlet port, wherein said valve system includes a biaser providing a biasing force to said primary spool having a predetermined magnitude, wherein said valve system includes a first fluid passage through said primary spool providing fluid communication between said first output port and said second end of said primary spool, said method comprising the steps of:

selecting either a standard mode or an energy saver mode of said valve system by selectably connecting said inlet port to said first end of said primary spool, wherein said standard mode is comprised of said primary spool and said secondary spool moving in unison within said valve chamber when said inlet port is in fluid communication with said first end of said primary spool, and wherein said energy saver mode is comprised of said primary spool and said secondary spool moving independently within said valve chamber when said inlet port is not in fluid communication with said first end of said primary spool;

energizing said solenoid to couple said inlet port to said second end of said secondary spool, thereby providing fluid communication from said inlet port to said second output port in both said standard mode and said energy saver mode; and

de-energizing said solenoid to isolate said inlet port from said second end of said secondary spool and from said second output port;

whereby when said solenoid is de-energized and said standard mode is selected, then fluid communication is continuously maintained between said inlet port and said first output port; and

whereby when said solenoid is de-energized and said energy save mode is selected, then fluid communication is between said inlet port and said first output port is modulated to maintain a predetermined pressure at said first output port, said modulating of said fluid communication resulting from moving said primary spool in said valve chamber independently relative to said secondary spool.

10. The method of claim 9 wherein said step of selecting said standard mode or said energy saver mode is comprised of positioning an end cap on said housing in a first orientation or a second orientation, wherein said end cap includes a passage for completing fluid communication between said inlet port and said first end of said primary spool when in said first orientation, and wherein said end cap includes a solid body for blocking fluid communication between said inlet port and said first end of said primary spool when in said second orientation.

11. The method of claim 9 wherein said step of selecting said standard mode or said energy saver mode is comprised of positioning a movable obstruction relative to a blockable passage between said inlet port and said first end of said primary spool.

12. The method of claim 11 wherein said movable obstruction is a screw selectably movable into and out of said blockable passage by rotation of said screw.